

Amendments to the Claims

1. (Currently amended) An isolated nucleic acid molecule comprising:
 - (a) the nucleotide sequence as set forth in ~~any of SEQ ID NO: 1, SEQ ID NO: 3, or SEQ ID NO: 5;~~
 - (b) a nucleotide sequence encoding the polypeptide as set forth in ~~any of SEQ ID NO: 2, SEQ ID NO: 4, or SEQ ID NO: 6;~~
 - (c) a nucleotide sequence that hybridizes ~~under at least moderately stringent conditions to the complement of the nucleotide sequence of either (a) or (b) under conditions comprising:~~
 - (i) 0.015 M sodium chloride, 0.0015 M sodium citrate at 50-65°C; or
 - (ii) 0.015 M sodium chloride, 0.0015 M sodium citrate, and 20% formamide at 37-50°C; or
 - (d) a nucleotide sequence complementary to the nucleotide sequence of ~~either (a) or (b)~~any of (a)-(c).

2. (Currently amended) An isolated nucleic acid molecule comprising:
 - (a) a nucleotide sequence encoding a polypeptide that is at least about 70 percent identical to the polypeptide as set forth in ~~any of SEQ ID NO: 2, SEQ ID NO: 4, or SEQ ID NO: 6,~~ wherein the encoded polypeptide has an activity of the polypeptide set forth in ~~any of SEQ ID NO: 2, SEQ ID NO: 4, or SEQ ID NO: 6;~~
 - (b) a nucleotide sequence encoding an allelic variant or splice variant of the nucleotide sequence as set forth in ~~any of SEQ ID NO: 1, SEQ ID NO: 3, or SEQ ID NO: 5~~ or the nucleotide sequence of (a), wherein the nucleotide sequence encoding the allelic variant or splice variant can hybridize to the nucleotide sequence of SEQ ID NO: 1 or the nucleotide sequence of (a) under hybridization conditions comprising:
 - (i) 0.015 M sodium chloride, 0.0015 M sodium citrate at 65-68°C; or
 - (ii) 0.015 M sodium chloride, 0.0015 M sodium citrate, and 50% formamide at 42°C;
 - (c) a region of the nucleotide sequence of ~~any of SEQ ID NO: 1, SEQ ID NO: 3, or SEQ ID NO: 5~~ or the nucleotide sequence of (a) or (b) encoding a polypeptide fragment of at least about

25 amino acid residues, wherein the polypeptide fragment has an activity of the encoded polypeptide as set forth in ~~any of SEQ ID NO: 2, SEQ ID NO: 4, or SEQ ID NO: 6~~, or is antigenic;

(d) a region of the nucleotide sequence of ~~any of SEQ ID NO: 1, SEQ ID NO: 3, or SEQ ID NO: 5~~ or the nucleotide sequence of any of (a) - (c) comprising a fragment of at least about 16 nucleotides;

(e) a nucleotide sequence that hybridizes ~~under at least moderately stringent conditions to~~ the complement of the nucleotide sequence of any of (a) - (d) under conditions comprising:

(i) 0.015 M sodium chloride, 0.0015 M sodium citrate at 50-65°C; or

(ii) 0.015 M sodium chloride, 0.0015 M sodium citrate, and 20% formamide at 37-50°C; or

(f) a nucleotide sequence complementary to the nucleotide sequence of any of (a) - ([d])e).

3. (Currently amended) An isolated nucleic acid molecule comprising:

(a) a nucleotide sequence encoding a polypeptide as set forth in ~~any of SEQ ID NO: 2, SEQ ID NO: 4, or SEQ ID NO: 6~~ with at least one conservative amino acid substitution, wherein the encoded polypeptide has an activity of the polypeptide set forth in ~~any of SEQ ID NO: 2, SEQ ID NO: 4, or SEQ ID NO: 6~~;

(b) a nucleotide sequence encoding a polypeptide as set forth in ~~any of SEQ ID NO: 2, SEQ ID NO: 4, or SEQ ID NO: 6~~ with at least one amino acid insertion, wherein the encoded polypeptide has an activity of the polypeptide set forth in ~~any of SEQ ID NO: 2, SEQ ID NO: 4, or SEQ ID NO: 6~~;

(c) a nucleotide sequence encoding a polypeptide as set forth in ~~any of SEQ ID NO: 2, SEQ ID NO: 4, or SEQ ID NO: 6~~ with at least one amino acid deletion, wherein the encoded polypeptide has an activity of the polypeptide set forth in ~~any of SEQ ID NO: 2, SEQ ID NO: 4, or SEQ ID NO: 6~~;

(d) a nucleotide sequence encoding a polypeptide as set forth in ~~any of SEQ ID NO: 2, SEQ ID NO: 4, or SEQ ID NO: 6~~ that has a C- and/or N- terminal truncation, wherein the encoded polypeptide has an activity of the polypeptide set forth in ~~any of SEQ ID NO: 2, SEQ ID NO: 4, or SEQ ID NO: 6~~;

(e) a nucleotide sequence encoding a polypeptide as set forth in ~~any of~~ SEQ ID NO: 2, SEQ ID NO: 4, or SEQ ID NO: 6 with at least one modification that is an amino acid substitution, an amino acid insertion, an amino acid deletion, C-terminal truncation, or N-terminal truncation, wherein the encoded polypeptide has an activity of the polypeptide set forth in ~~any of~~ SEQ ID NO: 2, SEQ ID NO: 4, or SEQ ID NO: 6;

(f) a nucleotide sequence of any of (a) - (e) comprising a fragment of at least about 16 nucleotides;

(g) a nucleotide sequence that hybridizes ~~under at least moderately stringent conditions~~ to the complement of the nucleotide sequence of any of (a) - (f) under conditions comprising:

(i) 0.015 M sodium chloride, 0.0015 M sodium citrate at 50-65°C; or

(ii) 0.015 M sodium chloride, 0.0015 M sodium citrate, and 20% formamide at 37-50°C; or

(h) a nucleotide sequence complementary to the nucleotide sequence of any of (a) - ~~(f)~~ (g).

4. (Original) A vector comprising the nucleic acid molecule of any of Claims 1, 2, or 3.

5. (Original) A host cell comprising the vector of Claim 4.

6. (Original) The host cell of Claim 5 that is a eukaryotic cell.

7. (Original) The host cell of Claim 5 that is a prokaryotic cell.

8. (Original) A process of producing a GPCR polypeptide comprising culturing the host cell of Claim 5 under suitable conditions to express the polypeptide, and optionally isolating the polypeptide from the culture.

9. (Canceled)

10. (Original) The process of Claim 8, wherein the nucleic acid molecule comprises promoter DNA other than the promoter DNA for the native GPCR polypeptide operatively linked to the DNA encoding the GPCR polypeptide.

11. (Original) The isolated nucleic acid molecule according to Claim 2, wherein the percent identity is determined using a computer program selected from the group consisting of GAP, BLASTN, FASTA, BLASTA, BLASTX, BestFit, and the Smith-Waterman algorithm.

12-42. (Canceled)

43. (Original) A composition comprising a nucleic acid molecule of any of Claims 1, 2, or 3 and a pharmaceutically acceptable formulation agent.

44. (Original) The composition of Claim 43, wherein said nucleic acid molecule is contained in a viral vector.

45. (Original) A viral vector comprising a nucleic acid molecule of any of Claims 1, 2, or 3.

46-55. (Canceled)

56. (Original) A nucleic acid molecule of any of Claims 1, 2, or 3 attached to a solid support.

57. (Original) An array of nucleic acid molecules comprising at least one nucleic acid molecule of any of Claims 1, 2, or 3.

58. (Canceled)